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FIRST ANNUAL REPORT

OF THE

MINIMUM WAGE COMMISSION

OF

MASSACHUSETTS.

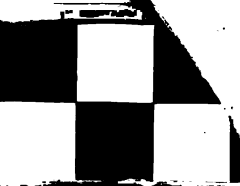
FOR THE SIX MONTHS ENDING DECEMBER 31, 1913.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
32 DEER STREET.

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MEMBERS OF THE COMMISSION.

H. LARUE BROWN, *Chairman.*

ARTHUR N. HOLCOMBE.

MABEL GILLESPIE.

AMY HEWES, *Secretary.*

The Commonwealth of Massachusetts.

REPORT.

To the Honorable the Senate and the House of Representatives in General Court assembled.

The Massachusetts Minimum Wage Commission herewith respectfully submits the following report, covering the period from July 1, 1913, when the commission took up its duties, to Jan. 1, 1914. To it is appended the report of the secretary, summarizing the work carried on during that period, and containing an analysis of the results obtained, together with other information regarding the work of the commission.

SURVEY OF MINIMUM WAGE LEGISLATION.

Minimum Wage in Other Countries.

Systems of minimum wage legislation have been in operation in New Zealand since 1894, in Victoria, Australia, since 1896, followed by the inauguration of somewhat similar systems in the other Australian States and in the Australian Commonwealth, and in Great Britain since January, 1910. Australasian legislation has in general followed one of two types. According to the Victorian system, minimum wages are established in specific occupations or industries through conferences known as wages boards, which consist of equal numbers of employers and employees, presided over by an impartial chairman. The determinations of the boards are reported in the government "Gazette," and the wages fixed by the board become at once legally binding. The second method, which is in operation in New Zealand, is that of establishing minimum wages through compulsory arbitration

courts. Compulsory arbitration, at first considered merely as a means for the peaceful settlement of industrial disputes, has become a mechanism for establishing minimum wages through the necessity under which the courts have found themselves of specifying minimum rates in the course of determining the conditions under which employment in the given industry or occupation shall continue. In practice, the operation of the conciliation or arbitration courts with regard to minimum wages has been very similar to that of the wages boards of the Victorian system.

In England the determinations are made by boards known as trade boards, composed of equal numbers of employers and employees, with a chairman and other members appointed by the Board of Trade. The determinations of the trade boards are made binding by order of the Board of Trade. The act at first applied to the four trades of tailoring, box-making, lace-making and chain-making. It has since been extended to cover several other occupations. As in Australasia, the rates of wages fixed apply to both men and women in the occupations in question.

Minimum Wage in Massachusetts.

Successful as the application of the minimum wage principle had appeared to be in other countries it was not until 1911 that agitation for an application of the principle in this country took public form in Massachusetts. In that year representatives of several groups of persons who were interested in social and industrial questions within the State presented to the Legislature a petition asking for an investigation with reference to the desirability of attempting minimum wage legislation in this State. As a result of their efforts a resolve was passed providing for the appointment of an investigating commission "to study the matter of wages of women and minors, and to report on the advisability of establishing a board or boards to which shall be referred inquiries as to the need and feasibility of fixing minimum rates of wages for women and minors in any industry."¹ The commission appointed in pursuance of the

¹ Chapter 71, Resolves of 1911.

resolve was known as the Commission on Minimum Wage Boards, and consisted of five members: Henry Lefavour, chairman, Richard Olney, 2d, John Golden, Elizabeth G. Evans and George W. Anderson. Under the direction of Miss Mary W. Dewson as secretary, an investigation was made into the condition of employees in confectionery factories, retail stores and laundries. With reference to an analysis of the results obtained, the commission made the following general statement: —

A large number of women of eighteen years of age and upward are employed at very low wages; it is indisputable that a great part of them are receiving compensation that is inadequate to meet the necessary cost of living.¹

In order to remedy the state of affairs revealed in the course of its investigations, the commission recommended that a permanent commission of three members be appointed, to be known as the Minimum Wage Commission, which should inquire into the wages paid to the female employees in any occupation in the Commonwealth, if the commission should have reason to believe that the wages paid to a substantial number of employees are inadequate to supply the necessary cost of living and to maintain the worker in health. If, after such investigation, the commission should still be of the opinion that the wages paid fail to meet the demands specified, the commission should then establish a wage board composed of six representatives of the employers and six representatives of the employees, with a number of disinterested members to represent the public. The wage determinations agreed upon by the board, if approved by the commission, should be declared the minimum wages for the occupation.

The Legislature of 1912, having received the report of the preliminary commission, passed an act (chapter 706, Acts of 1912)² embodying in general the recommendations made, but substituting publicity for the penalty for failure to pay the rates determined. The present commission was appointed

¹ House No. 1697, report of the Commission on Minimum Wage Boards, p. 12.

² Appendix No. 1.

under the terms of the act, which took effect upon the first day of July, 1913.

In the legislative session of 1913, eight States followed the example of Massachusetts in passing minimum wage laws. Seven of these States — California, Colorado, Minnesota, Nebraska, Oregon, Washington and Wisconsin — provided for commissions to deal with the matter of establishing minimum wage rates, while one, Utah, prescribed a minimum wage for women and minors by statute. Investigating commissions have been at work upon the matter in Michigan, New York and Connecticut. Laws providing for the determination of minimum rates were introduced into the Legislature of several other States, but failed of passage.

With respect to the establishment of minimum wages, the provisions of the acts of the various States, with the exception of Utah, are in general substantially the same. A preliminary investigation of wages in the occupations in question is usually required, and if wages are ascertained to be unsatisfactory, the commission is authorized to appoint a wage or advisory board which becomes responsible for the fixing of the rates of wages. In Nebraska, as in this State, the commission is empowered to publish in the newspapers of the State the names of employers who refuse to pay the rates of wages determined upon. In the remaining States a refusal to comply with the order regarding rates of wages constitutes a misdemeanor. Three States — California, Oregon and Washington — in each of which the commission is known as the Industrial Welfare Commission, have extended the powers of those bodies beyond the mere determination of minimum wages. In Washington the commission may also regulate conditions of labor, and in California and Oregon both maximum hours and conditions of labor may be determined.

ACTIVITIES OF THE PRESENT COMMISSION.

The Massachusetts statute imposes upon the commission the duty to inquire into the wages paid to female employees in the Commonwealth, and to form an opinion as to whether the wages paid to a substantial number in any occupation

are adequate to meet the necessary cost of living and to maintain the worker in health. If, after such investigation, wages are found to be inadequate, it becomes the further duty of the commission to appoint a wage board which shall determine the appropriate minimum rates, and report such determinations to the commission. If the commission approves, the rates are established as the minimum rates for the industry.

During the six months of the commission's activity, from July 1, 1913, to Jan. 1, 1914, investigations have been made into the wages of women employees in three industries — the brush industry, the corset industry and the confectionery industry¹ — and have been begun in other industries. The industries were chosen on account of the large proportion of women workers among the employees and the low level of wages indicated by such available material as the reports of the Bureau of Statistics, especially "Statistics of Manufactures, 1911," and various other special reports. In the case of brushes and corsets, a study was made of every establishment within the State which employs women, in so far as the names and locations of such establishments could be ascertained.

The commission has held it of first importance to inform itself to the fullest possible extent regarding the elements of the labor contract, — the wages paid and the corresponding occupations and hours. A transcript of the pay roll for the past fifty-two weeks for all female employees was taken by agents of the commission. Where the earnings are determined by piece rates, a schedule of such rates for the various occupations in each establishment was secured. Books were defective or in such condition that only partial records were obtainable in a small number of cases, but on the whole the pay rolls appeared to be accurately kept. In all, wage records for the fifty-two weeks preceding the investigation were taken for 6,926 women employees, 837 of these for brush workers, 2,388 for women employed in the corset factories and 3,701 for women at work on candy. For a

¹ The analysis of the data concerning the confectionary industry has not yet been compiled; consequently, the results are not available for the present report.

large number of these, personal data regarding age, birth-place, family and living conditions were also obtained. In addition, a careful study was made of each process in which women are engaged, whether performed by hand or machine.

According to an analysis of the results for the separate industries, a considerable number of women workers are receiving a wage which is inadequate to supply them with the necessities of life. Almost exactly two-thirds of the brush workers for whom wage records were available received an average for the year of less than \$6 a week. A smaller proportion of corset workers, 35.5 per cent., receive less than \$6 a week. The sum named is lower than the minimum amounts usually named as necessary to maintain a normal, healthy existence for women workers.

In connection with these statements, however, the failure of many employers to keep records of the number of hours worked must be taken into consideration. In both the brush and corset industries, records of hours worked were available for only a small proportion of the employees, and in many cases for only a few weeks immediately preceding the investigation. The statement is made by certain manufacturers that not only do a large number of the employees work for only part time, but also that failure to work for full time is due, not to lack of work in the factory, but to choice on the part of the workers. Consequently, the amount received at the end of the week is frequently smaller than the sum which the workers might have earned had they been employed for full time. The work of the commission has been handicapped to some extent by this defect in the records, since the average earnings and the length of the average week could be related in so small a proportion of cases. Fortunately, such difficulties will be lessened after the present year, owing to the passage of the law requiring employers of labor in manufacturing and mercantile establishments to keep time books showing the number of hours worked by all employees each day.¹

With very few exceptions, the manufacturers have shown the fullest co-operation, and have facilitated in every way

¹ Chapter 619, Acts of 1913.

the work of the commission and its agents. The commission wishes to make acknowledgment of the many courtesies which have been extended by manufacturers and their representatives.

It has been the endeavor of the commission to carry on its study with the least possible disturbance to the industries, consistent with its purpose to inform itself thoroughly as to the facts of the wage situation.

In order to carry out its duties adequately, in fulfilment of the spirit of the act, the commission has found it necessary to gain a thorough acquaintance with the points of view of both manufacturers and workers. Conferences have therefore been held with representative manufacturers before undertaking the study of wages in detail, and from them have been obtained much valuable information upon the state of the industry, the effect of the tariff, the nature and extent of interstate competition and local problems. Conferences were also held with the workers, who were of great assistance in making plain the particular and general conditions surrounding the women wage earners in the industry.

At the conclusion of its study of brush-making, the commission was of the opinion that the wages paid to a substantial number of the female employees were inadequate to supply the necessary cost of living and maintain the worker in health, and voted to establish a wage board for the industry.

It was the policy of the commission to appoint the members of the wage board in such a way that it might be as widely representative as possible. To this end, every manufacturer in the State was asked to make nominations. Nominations were also called for from the workers, and an effort was made to secure representatives from the different groups and nationalities among them. The invitations to make nominations were responded to in two cases by the manufacturers, in each of which appointments followed, and in three cases by the workers, as a result of which two appointments were made. Although the manufacturers failed to make a sufficient number of nominations to constitute their representation, they were, nevertheless (with

a single exception), ready to accept appointment. The workers were likewise willing to serve, but some of them labored under a serious handicap in their apprehension that their activities upon the board might affect the tenure of their positions. The commission is glad to say that in the main this apprehension has proved without foundation. Aside from the protection afforded by the statute itself, the co-operation on the part of employers, which has been mentioned in connection with the gathering of information, has been conspicuous here also. That there should have been one apparent exception is not surprising, though regrettable. That there should have been only one, is a tribute to the good sense and public spirit of the employers in this industry, and is matter for congratulation. In the one instance mentioned two workers who were appointed to the wage board were "laid off" immediately after their appointment. This apparent defiance of the letter and spirit of the statute is now receiving the attention of the commission.

The Brush Makers' Wage Board is at present taking into consideration the needs of the employees and the financial condition of the industry, making use of the information submitted by the commission, with a view to determining the appropriate minimum rates.

In one of the industries already investigated the factor of prison labor with a degree of potential competition exists as an element in the situation. It is a matter for consideration whether existing statutes have sufficient regard for the complicating effect of such labor upon wages, and especially upon the minimum wage for women and minors.

RECOMMENDATIONS.

It has become evident in the light of experience that additional legislation is required in order to increase the efficiency of existing statutes. Certain industries in which it may become advisable to call a wage board embrace only a small number of establishments. In some of these, adequate representation of both employees and employers may be secured by a smaller membership than the minimum prescribed, for which reason it is recommended that the

number in each case be left to the discretion of the commission. In the interest of economy it is recommended that the commission be not required to publish its findings and recommendations in every county of the Commonwealth, regardless of the location of the industries, but that the same discretion be allowed as in the case of the facts as to the acceptance of its recommendations. The investigations already made revealed a few instances of the lack of wage records in any reliable form. Accurate records are necessary for the execution of the law and should be required. Lastly, it is important to remove as far as possible all fear and apprehension from the workers in the activities which may be required of them.

The commission therefore recommends the following measure: —

AN ACT RELATIVE TO THE DETERMINATION OF MINIMUM WAGES FOR
WOMEN AND MINORS.

Be it enacted, etc., as follows:

SECTION 1. Section four of chapter seven hundred and six of the acts of the year nineteen hundred and twelve is hereby amended by striking out all after the words "consisting of", in the sixth line, and inserting in place thereof the following: — an equal number of representatives of employers in the occupation in question and of persons to represent the female employees in said occupation, and of one or more disinterested persons appointed by the commission to represent the public, but the representatives of the public shall not exceed one-half of the number of representatives of either of the other parties. The commission shall have absolute and final power in determining who shall be members of any wage board and may fill any vacancy in the membership of any wage board at any time occurring. In selecting the members to represent the female employees in any occupation, the commission shall, so far as it deems practicable, ascertain what persons are desired by said female employees as the representatives of said female employees on said board; and similarly in its selection of members to represent the employers it shall so far as it deems practicable ascertain what persons are desired by said employers as their representatives. The commission shall designate the chairman from among the representatives of the public, and shall make rules and regulations governing the selection of members and the modes of procedure of the boards, and shall exercise exclusive jurisdiction over all questions arising with reference to the validity of the procedure and of the determinations of the boards. The members of wage boards

shall be compensated at the same rate as jurors; they shall be allowed the necessary traveling and clerical expenses incurred in the performance of their duties, these payments to be made from the appropriation for the expenses of the commission, — so as to read as follows: — *Section 4.* If after such investigation the commission is of the opinion that in the occupation in question the wages paid to a substantial number of female employees are inadequate to supply the necessary cost of living and to maintain the worker in health, the commission shall establish a wage board consisting of an equal number of representatives of employers in the occupation in question and of persons to represent the female employees in said occupation, and of one or more disinterested persons appointed by the commission to represent the public, but the representatives of the public shall not exceed one-half of the number of representatives of either of the other parties. The commission shall have absolute and final power in determining who shall be members of any wage board and may fill any vacancy in the membership of any wage board at any time occurring. In selecting the members to represent the female employees in any occupation, the commission shall, so far as it deems practicable, ascertain what persons are desired by said female employees as the representatives of said female employees on said board; and similarly in its selection of members to represent the employers it shall so far as it deems practicable ascertain what persons are desired by said employers as their representatives. The commission shall designate the chairman from among the representatives of the public, and shall make rules and regulations governing the selection of members and the modes of procedure of the boards, and shall exercise exclusive jurisdiction over all questions arising with reference to the validity of the procedure and of the determinations of the boards. The members of wage boards shall be compensated at the same rate as jurors; they shall be allowed the necessary traveling and clerical expenses incurred in the performance of their duties, these payments to be made from the appropriation for the expenses of the commission.

SECTION 2. Section six of said chapter seven hundred and six, as amended by section two of chapter six hundred and seventy-three of the acts of the year nineteen hundred and thirteen, is hereby further amended by striking out the word “shall”, in the fifteenth line, and inserting in place thereof the word: — may, — and by striking out the words “in at least one newspaper in each county of the commonwealth”, in the fifteenth and sixteenth lines, and inserting in place thereof the words: — at such times and in such manner as it may deem advisable, — so as to read as follows: — *Section 6.* Upon receipt of a report from a wage board, the commission shall review the same, and may approve any or all of the determinations recommended, or may disapprove any or all of them, or may recommit the subject to the same or to a new wage board. If the commission approves any or all of the determi-

nations of the wage board it shall, after not less than fourteen days' notice to employers paying a wage less than the minimum wage approved, give a public hearing to such employers, and if, after such public hearing, the commission finally approves the determination, it shall enter a decree of its findings and note thereon the names of employers, so far as they may be known to the commission, who fail or refuse to accept such minimum wage and to agree to abide by it. The commission may thereafter publish at such times and in such manner as it may deem advisable a summary of its findings and of its recommendations. It shall also at such times and in such manner as it shall deem advisable publish the facts, as it may find them to be, as to the acceptance of its recommendations by the employers engaged in the industry to which any of its recommendations relate, and may publish the names of employers whom it finds to be following or refusing to follow such recommendations. An employer who files a declaration under oath in the supreme judicial court or the superior court to the effect that compliance with the recommendation of the commission would render it impossible for him to conduct his business at a reasonable profit shall be entitled to a review of said recommendation by the court under the rules of equity procedure. The burden of proving the averments of said declaration shall be upon the complainant. If, after such review, the court shall find the averments of the declaration to be sustained, it may issue an order restraining the commission from publishing the name of the complainant as one who refuses to comply with the recommendations of the commission. But such review, or any order issued by the court thereupon, shall not be an adjudication affecting the commission as to any employer other than the complainant, and shall in no way affect the right of the commission to publish the names of those employers who do comply with its recommendations. The type in which the employers' names shall be printed shall not be smaller than that in which the news matter of the paper is printed. The publication shall be attested by the signature of at least a majority of the commission.

SECTION 3. Section seven of said chapter seven hundred and six is hereby repealed.

SECTION 4. Section eleven of said chapter seven hundred and six, as amended by section one of chapter three hundred and thirty of the acts of the year nineteen hundred and thirteen, is hereby further amended by inserting after the word "keep," in the second line, the words: — in such form as may be prescribed by the commission, — and by inserting after the word "him", in the fourth line, the words: — together with a record of the amount paid each week to each woman and minor, — so as to read as follows: — *Section 11.* Every employer of women and minors shall keep in such form as may be prescribed by the commission, a register of the names, addresses and occupations of all women and minors employed by him, together with a record of the

amount paid each week to each woman and minor, and shall, on request of the commission or of the director of the bureau of statistics, permit the commission or any of its members or agents, or the director of the bureau of statistics or any duly accredited agent of said bureau, to inspect the said register and to examine such parts of the books and records of employers as relate to the wages paid to women and minors. The commission shall also have power to subpoena witnesses, administer oaths and take testimony. Such witnesses shall be summoned in the same manner and be paid from the treasury of the commonwealth the same fees as witnesses before the superior court.

SECTION 5. Section thirteen of said chapter seven hundred and six, as amended by section three of chapter six hundred and seventy-three of the acts of the year nineteen hundred and thirteen, is hereby further amended by striking out the words "or because the employer believes that the employee may testify", in the fourth and fifth lines, and inserting in place thereof the words: — or has served or is about to serve upon a wage board, or has given or is about to give information concerning the conditions of such employee's employment, or because the employer believes the employee may testify, or may serve upon a wage board, or may give information concerning the conditions of the employee's employment, — so as to read as follows: — *Section 13.* Any employer who discharges or in any other manner discriminates against any employee because such employee has testified, or is about to testify, or has served or is about to serve upon a wage board, or has given or is about to give information concerning the conditions of such employee's employment, or because the employer believes that the employee may testify, or may serve upon a wage board, or may give information concerning the conditions of the employee's employment, in any investigation or proceeding relative to the enforcement of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than two hundred dollars, and not more than one thousand dollars for each offence.

SECTION 6. This act shall take effect upon its passage.

Necessity for an Increased Appropriation.

The commission is asking for an appropriation of \$32,500. At the time when the appropriation to cover the work for the first five months of its activity was made there existed no data upon which a detailed estimate could be based, and the sum of \$7,000 then appropriated was little more than a guess at the requirements. By the exercise of rigid economy the commission has been able to initiate its work, keeping within the amount fixed. This would scarcely have been

possible, except for the fact that the heavy expenses attending the meetings of the wage boards have not yet been encountered. The first board is now in session and others are to be established in the near future. The field of the activity of the commission must expand in the coming year if its duties are to be adequately performed. The industries chosen for the initial investigations are small and centrally located. Industries employing many thousands of women and minors must be studied in the coming year. These are scattered throughout the Commonwealth. In addition to the gathering of a large amount of data concerning wages, the statute imposes upon the commission the obligation of ascertaining whether employers in each occupation are paying the minimum rates after they have been established. This necessitates a re-examination of the pay rolls and further proceeding in accordance with the findings thereof. In order to fulfil these requirements the commission must increase the number of agents and must incur various incidental expenses.

The detailed estimates, which comprise the total asked for, are based upon five months' experience, and relate to the carrying out of carefully made plans. It is the opinion of the commission that the sum indicated represents the minimum upon which efficient service can be rendered to the Commonwealth.

Respectfully submitted,

H. LARUE BROWN,
MABEL GILLESPIE,
ARTHUR N. HOLCOMBE,

Minimum Wage Commission.

REPORT OF THE SECRETARY.

To the Minimum Wage Commission.

I herewith submit the following report of the investigations into the wages of women workers in the brush and corset factories of this Commonwealth.

WAGES OF WOMEN IN THE BRUSH FACTORIES IN MASSACHUSETTS.

STATISTICS OF MANUFACTURE.

The use of brushes is a part of the daily routine of practically every one. For health, comfort or adornment, for the performance of household tasks, for the operation and care of machinery, and for hundreds of other uses in connection with production, brushes have long been indispensable. In spite of their universal use, however, the manufacture has received practically no attention in the various studies of different industries which have been made in this country. This may be due to the fact that in respect to the number of persons employed it is rated as one of the smallest industries in the United States. According to the thirteenth census only 8,258 persons are engaged in the whole industry.¹

Massachusetts holds a prominent place in the industry. At the time of the taking of the last census, 1909, New York alone ranked higher in the amount of capital invested and the number of persons employed. With regard to capital invested, the 113 brush establishments in New York, capitalized at \$2,525,103, ranked ahead of the 30 in Massachusetts by only \$288,764. The number of persons engaged in the industry in Massachusetts was 1,810, or 412 less than the total number employed in New York.

The manufacture is widely scattered over the United States and is characterized by small establishments. In Massachusetts the average number of workers to a factory is only 60.

¹ United States, thirteenth census, Vol. VIII., p. 666.

In the present study, made in August and September, 1913, 32 establishments engaged in the manufacture of brushes were found in the State. From these, wage records were secured for 837 women. These represent the total number of women on the pay rolls of the establishments at that time.

The following groups were not included in the tabulation: —

1. Workers who were employed less than four weeks during the year.
2. Those who worked at their homes.
3. Those working in the factories, but paid by subcontractors and not by the factory directly.
4. Those for whom the factory records were defective or incomplete.

In all, these four groups represented 240 persons, leaving 597 which are included in the following tables.

Besides the wages paid, additional information was secured for 484 persons. This covers data for age, nativity, marital conditions, living arrangements and industrial history. In most cases this information was given very willingly, in others it was not forthcoming.

Statistics of Manufacture (Brushes).

	CENSUS RETURNS ¹ FOR 1909.		Statistics of Manu- factures for 1911, Massachu- setts.
	United States.	Massachu- setts.	
1. Number of establishments,	384	30	25
2. Capital,	\$11,091,796	\$2,236,339	\$2,349,422
3. Value of products,	\$14,694,003	\$2,874,524	\$2,968,938
4. Value added by manufacture (product less cost of materials),	\$7,507,086	\$1,518,724	\$1,426,093
5. Cost of materials used, including fuel and rent of power,	\$7,186,937	\$1,355,800	\$1,562,845
6. Expense (rent, tax, contract, other),	\$1,421,148	\$349,917	— ²
7. Salaries,	\$1,046,733	\$210,485	— ²
8. Wages,	\$3,041,145	\$652,796	\$661,702
9. Total cost,	\$12,695,963	\$2,568,998	— ²
10. Profit,	\$1,999,040	\$305,526	— ²
11. Employees: —			
Number of salaried officials and clerks,	914	152	— ²
Average number of wage earners employed during the year,	6,954	1,629	1,516
Male, sixteen years of age and over, December 15, Female, sixteen years of age and over, Decem- ber 15,	4,597	679	510 ³
Female, under sixteen years of age, December 15,	2,596	1,051	825 ³
.	127	25	181 ⁴

¹ United States, thirteenth census, Vol. VIII., p. 518 ff.

² Not taken by the Massachusetts Bureau of Statistics.

³ This is the number of employees, eighteen years of age and over, December 16.

⁴ This is the number of employees under eighteen years of age, December 16.

Manufacture of Brushes by States.¹

STATE.	Number of Estab- lishments.	Number engaged in Industry.	Capital.	Value of Product.
California,	8	22	\$20,655	\$35,508
Colorado,	4	10	14,595	19,160
Connecticut,	12	157	106,907	210,496
Georgia,	3	15	11,230	19,339
Illinois,	32	392	497,181	964,850
Maine,	4	30	40,950	46,462
Maryland,	11	575	1,528,204	1,123,515
Massachusetts,	30	1,810	2,236,339	2,874,524
Michigan,	14	260	329,694	351,095
Missouri,	11	63	69,770	140,474
New Jersey,	25	968	1,380,069	1,563,961
New York,	113	2,222	2,525,108	4,075,839
Ohio,	22	549	766,332	1,219,461
Pennsylvania,	55	541	823,070	1,042,312
Rhode Island,	9	156	123,940	202,634
Wisconsin,	14	197	242,906	249,487
All other States,	17	—	—	—
Total in United States,	384	—	—	—

¹ United States, thirteenth census, Vol. VIII., p. 666. Figures given are for 1909.

THE OCCUPATIONS.

Bristles, the materials with which the brush manufacturer is most concerned, are imported mainly from Russia and China, and in small amounts from central Europe. Our own country is practically a negligible factor in the bristle market, for the bristles of improved hogs are greatly inferior to those of wild breeds. Tampico, a vegetable fiber from Mexico, is often used as a substitute for bristles. It is much cheaper, but, like all the other substitutes in use, is decidedly inferior in quality. Horsehair is combined with bristles in many of the cheaper-grade brushes. Various kinds of animal hair, such as red sable hair, squirrel hair (known as camel hair) and badger hair are in use for artists' brushes, and ox hair, bear hair and skunk or "fitch" hair are used for varnish brushes. Even in artists' brushes, however, bristles are in most common use.

In general, the processes employing women make light work requiring dexterity rather than taxing the strength. The occupations differ according to the grade of brush and the methods of production in different establishments. Those most common in order of the numbers employed in each are: brush-making, finishing, setting, nailing, cementing, packing and shipping, drawing, soldering, miscellaneous machine processes, hammering.

Those employing a smaller number of persons are: stamping, handling, *i.e.*, putting on handles, plugging, assembling, boring, stock work, rimming, inspecting, serrating, stapling, pegging.

The introductory processes in brush-making are usually performed outside the factory or by men inside. Wooden handles and bases are in most cases bought ready made. The bristles and fibers are cleaned and sorted by men, and the metal ferules are prepared by them also. Brush-making was a household industry a century ago, and the trade remains to-day, to a large extent, a handicraft. The historic processes connected with the making of brushes are the hand processes of drawing and setting. These processes have been supplemented to a considerable degree in large factories, but are still almost universally used to some extent, and are the principal operations in all except the largest factories.

Drawing. — The back of the brush, with holes already bored through it, is held in a small vise in such a position that the worker, seated before her table, can easily work upon it with wire and bristles necessary for the process. The worker passes a loop of very fine copper or brass wire through one of the holes from the back, and inserts in this loop the proper number of bristles to fill the hole, selected from a pile at her side. She then draws the wire tight, pulling the bristles into the hole and bending them double. They are not drawn all of the way through the hole, but are wedged tightly in place. The process of pulling the wire tight requires something of a jerk, and the operative keeps her hand wrapped with layers of thick cloth to prevent its being cut. A loop of the same length of wire is then inserted in the next hole and the process is repeated until all

the holes in the back of the brush are filled with bristles. The bristles are later trimmed and the back of the brush is covered with wood or metal. The workers almost invariably sit at tables or benches to perform this process. The work is monotonous, but simple and fairly clean, and requires little physical exertion except the slight pull at the instant of filling the hole with bristles.

Machine Drawing. — Machine drawing was less often found in the course of this study. The process is as follows: the back, which is to be filled with bristles, is clamped in a wooden vise, held just above the operative's lap. A fine brass wire runs through a steel needle approximately 10 inches in length. This needle is used to pass the wire rapidly through the hole to receive the bunch of bristles. This part of the process is done by hand. Directly in front of the operative is a small machine at the back of which bristles are fed in automatically at the pressure of a trip by the operative's foot. The proper amount of bristles to fill the hole in the back is passed forward along the edge of a disc and held in place until she takes them out by hand. This machine does two things: it measures correctly the amount of bristles and it marks clearly the center of the bristles so that the operative passes her wire around this point instead of having to stop and measure the center. It insures small wastage in trimming. Pay is so much per hundred holes. It is estimated that a period of three to five months is needed to develop average skill, and a woman's maximum is not often reached in less than a year's time. Usually the learner is paid time wages the first few weeks. During this period she is apt to waste so much material that she often occasions actual loss to the firm.

Setting. — In this process, as commonly found as drawing in the older and smaller establishments, the bristles are fastened with pitch instead of wire. It is performed as follows: the worker is seated at a table in the center of which is a pot of hot pitch, considerably below the boiling point. The pitch is usually heated by pipes passed through the center of the receptacle. The worker holds a handful of bristles in her left hand, and from this selects the right

number to fill the hole in the back of the brush. In this apparently unimportant selection lies a large part of the skill of the trained worker, for if too many or too few are taken and dipped in the pitch they do not fit, and must be thrown aside to go through the cleaning process again from the beginning if they are to be used. Having selected her bristles the worker dips one end of them into the hot pitch, then takes a piece of twine which she runs across the ends of the bristles through the pitch, makes a few turns around the bristles, and then runs the twine back across the end of the pitch to hold it firmly. This end of the bunch of bristles is then redipped in the pitch and inserted in the hole with a dexterous twist which spreads the pitch evenly throughout the hole.

The two processes just described are usual in the making of such brushes as scrubbing, floor and toilet brushes, that is, "compound" brushes, or those having more than one cluster of bristles or fibers. In the case of "simple" brushes — those with one round or oval opening — the processes are usually included in the group known as "brush-making."

Brush-making. — This term applies to the various processes of inserting and fastening the bristles in paint and similar brushes. The first of these is weighing the bristles into the appropriate amounts for each brush. They are then inserted in the round or oval shaped metal ferule, and the ferule is pounded down and flattened in order to hold the bristles securely until they can be cemented. A different method is employed with the wide, flat brushes such as are used for whitewashing. With these the bristles are evenly distributed in the ferule which protrudes over the edge of the wooden handle. A thin piece of steel is passed down exactly through the center, cutting them longitudinally. When the bristles are so separated a wooden plug is inserted. This plug is beveled so that it can be driven in and hold the bristles firmly.

Cementing. — Cement is poured into the open end of the ferule over the top end of the bristles from a small dropper, or it is driven in from a machine operated by compressed air.

Nailing. — Before the cement has hardened the handle is nailed into the ferule with a power-driven machine.

Hammering. — The nails are left with rough ends by the machine and must be pounded down on both sides of the brush.

Stamping. — Many firms stamp brushes with their names or trade marks. Stamping is done by hammering the die into the wooden handle.

Soldering. — Where parts are to be soldered the worker is seated at a bench upon which a Bunsen flame is burning; a small rack holds the soldering iron in the flame. The parts are smeared with a substance to make the solder hold, held by the pincers and a drop of solder is placed upon them. The odor and heat are unpleasant in hot weather. Operators keep their fingers wrapped with thick cloths to prevent burning.

Finishing. — The brushes are now ready to be varnished, either by hand with a brush, — a process which requires a moderate degree of skill, — or by being placed in a rack which is dipped in varnish or shellac. When dry, the brushes are inspected, wrapped, tied and are ready for shipment.

SUBCONTRACTING.

In two factories the agents of the commission found it necessary to deal with the rather difficult problem of subcontracting within the establishments. In these factories special rooms or portions of rooms are given over to the contractors, who are paid at standard rates for their output. The contractor is then free to engage his own labor at whatever price he considers advisable, and to vary the number of his workers according to the necessities of the work. He pays his workers out of the sum allotted to him, without supervision from the main office, and without recording in the office the amounts paid.

It was of course impossible for the agents to obtain any satisfactory wage data for the workers who were under this system when the study was made, except to obtain from the contractors the numbers and names of the women employed, with a statement of their weekly rates of pay, and to take a record of the number of hours worked, whenever

such records had been kept in the factory office. The rates named by the contractors were usually higher than the prevailing rates in the two factories in which the subcontract slips were found. The actual sums received by the workers each week are, however, as has been previously noted, not a matter of record, and the manufacturers themselves professed ignorance of them. Apparently an effort is made by the contractors to prevent the rates becoming known, possibly because dissatisfaction among regular workers in the same factory might arise, or because too strong a light might be thrown upon their own rates of profit. In short, the ordinary evils of subcontracting exist potentially in every shop of this kind where rates are precluded from direct supervision from the factory office.

THE WAGE SITUATION.

The level of the wages in the several occupations in the manufacture of brushes is shown in Table I. (a). Almost exactly two-thirds of the whole number of women in the industry have average weekly earnings of less than \$6. This proportion is the same as that calculated from the classified weekly wages given by the last report of the Statistics of Manufactures (1911), page 95. In the latter case, in which the figures were furnished to the Bureau of Statistics by the manufacturers themselves for the week ending December 16, just 66 per cent. of the women over eighteen years of age earned under \$6.

According to the same report no industry in the State other than brushes has as high a per cent. of its female employees earning less than \$6 per week, and only two others have a larger per cent. of female employees earning less than \$8 per week. These two are: —

1. Iron and steel bolts, nuts, washers and rivets not made in steel works or rolling mills.

2. Canning and preserving fish.

Each of these employ less than 400 women workers.

It may, therefore, be asserted that, compared with other industries in the State, the wages paid to women in the manufacture of brushes are markedly low.

Table I. (a) shows that almost a quarter of the workers are found in the group earning \$4 and less than \$5; that the next largest group (23.5 per cent.) earn \$5 and less than \$6; and that the third in size (17.6 per cent.) earn under \$4.

Table I. (a) also enables us to locate the occupations with the largest groups of low-paid workers. Cementing, packing, shipping and brush-making have the largest per cent. of workers earning under \$4. Finishing and packing and shipping have more than a third of the workers earning \$4 and under \$5, and over 45 per cent. of the workers in hammering belong in this group of low-paid workers. More than a quarter of the brush makers, finishers and nailers are in the group of \$5 and under \$6, and a majority of the small group of solderers are also found there. The largest groups of setters and drawers are in the \$6 and under \$7 group. With the exception of drawing, less than 20 per cent. of the workers in any occupation are found in the groups earning over \$7.

In consideration of the question whether the industry will bear a higher rate of compensation than some employers pay, a comparison of the wage level of different establishments is highly important. Examination of Table III. affords this comparison.

Establishment No. 1 is shown to pay less than the average for the whole industry. Not only do a smaller proportion receive "\$9 and over" than in the industry as a whole, but a larger proportion of workers is found in every one of the lower wage groups; for example, 79.1 per cent. of all the workers in the industry earn less than \$7 a week, but in the establishment under consideration 91.4 per cent. of the workers earn less than \$7 a week, — a variation of 12.3 per cent. below the average. Establishments Nos. 10 and 7, on the contrary, pay conspicuously higher wages than the average. Establishment No. 10 has only 25 per cent. of its workers earning less than \$9, and Establishment No. 7 only 36.4 per cent. earning less than \$9, as against an average of 93 per cent. under \$9 in the industry as a whole. This study has made it plain that great variation in wages exists between establishments, and that establishments pay-

ing higher wages exist and prosper in the same neighborhood with others whose wage level is decidedly lower. This fact is true of establishments with similar product, manufacturing for the same market, and for establishments with extreme variation in size of plant. The level of wages is usually in favor of the smaller.

In estimating the per cent. of unemployment, a study was made of the 391 workers whose payments extended over a period of eleven months or more previous to the taking of the transcript of the pay roll. This selected group, of course, constitutes the steadiest body of workers, but it seemed necessary to exclude all others to avoid the danger of attributing unfairly to the industry the absence of persons who for any one of a variety of reasons left the factories permanently in the course of the year.

The variation of employment is shown for this selected group of workers by the curve in Diagram I. It is probable that the largest per cent. of unemployment which occurs in June and August is very largely determined by vacations occurring during these months. The nature of the manufacture does not bring about great seasonal fluctuations. (See also Table V.)

HOURS OF LABOR.

Tables IV. (a) and IV. (b) show that the work of the majority of women employees averaged from forty-two to fifty hours a week during the year; that is, the length of the average working week is less than the legal number of hours allowed in Massachusetts. The majority of workers in the industry are, therefore, not working full time. It will be noticed in Table IV. (b) that this is true of time as well as piece workers, which fact indicates lack of work. It will be noticed that there is no conspicuous relation between hours and wage. For instance, of those earning \$4 and less than \$5, roughly, half average less than forty-six hours of work a week and half more than forty-six hours. Distribution of the same character belongs to most of the other groups.

AGE OF WORKERS.

The occupations connected with brush-making are carried on by young women. It can be seen in Tables II. (a) and II. (b) that the largest age group is eighteen and less than twenty-one years, and the next is twenty-one and less than twenty-five years. Forty-two per cent. of the workers whose ages were secured were less than twenty-one, 64 per cent. less than twenty-five. The youngest workers are conspicuously the lowest paid. Eighty-eight per cent. of those earning under \$6 are under twenty-one.

TABLE I. (a). — *Average Weekly Earnings: by Occupations.*

OCCUPATIONS.	NUMBER AND PER CENT. OF WORKERS EARNING —																TOTAL.	
	UNDER \$4.		\$4 AND UNDER \$5.		\$5 AND UNDER \$6.		\$6 AND UNDER \$7.		\$7 AND UNDER \$8.		\$8 AND UNDER \$9.		\$9 AND OVER.					
	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.		
Brush-making,	37	23.3	35	22.0	42	26.4	24	15.1	13	8.2	4	2.5	4	2.5	159	100		
Finishing,	24	15.8	53	34.9	41	27.0	6	3.9	11	7.2	6	4.0	11	7.2	152	100		
Setting,	8	10.5	10	13.2	14	18.4	20	26.3	14	18.4	6	7.9	4	5.3	76	100		
Nailing,	6	18.2	9	27.2	10	30.3	2	6.1	3	9.1	2	6.1	1	3.0	33	100		
Cementing,	12	40.0	5	16.6	7	23.3	2	6.7	2	6.7	—	—	2	6.7	30	100		
Packing and shipping,	9	32.1	10	35.7	6	21.4	1	3.6	—	—	1	3.6	1	3.6	28	100		
Drawing,	1	4.8	3	14.3	1	4.8	6	28.5	1	4.8	4	19.0	5	23.8	21	100		
Soldering,	1	6.7	—	—	9	60.0	5	33.3	—	—	—	—	—	—	15	100		
Hammering,	2	18.2	5	45.4	3	27.3	1	9.1	—	—	—	—	—	—	11	100		
Less than ten workers,	5	11.4	9	20.4	5	11.4	4	9.1	7	15.9	3	6.8	11	25.0	44	100		
Miscellaneous machine processes,	—	—	6	40.0	2	13.3	4	26.7	2	13.3	—	—	1	6.7	15	100		
More than one process,	—	—	5	38.4	—	—	2	15.4	4	30.8	—	—	2	15.4	13	100		
Total,	165	17.6	150	25.1	140	23.5	77	13.9	57	9.5	28	4.4	43	7.0	597	100		

TABLE I. (b). — Average Weekly Earnings: by Occupations (Cumulative).

NUMBER AND PER CENT. OF WORKERS EARNING —														
OCCUPATIONS.	UNDER \$4.		UNDER \$5.		UNDER \$6.		UNDER \$7.		UNDER \$8.		UNDER \$9.		\$9 AND OVER.	
	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.
Brush-making,	37	28.3	72	45.3	114	71.7	138	86.8	151	95.0	155	97.5	4	2.5
Finishing,	24	15.8	77	51.0	118	77.6	124	81.6	135	88.8	141	92.8	11	7.2
Setting,	8	10.5	18	23.7	32	42.1	52	68.4	66	86.8	72	94.7	4	5.3
Nailing,	6	18.2	15	45.5	25	75.8	27	81.8	30	90.9	32	97.0	1	3.0
Cementing,	12	40.0	17	56.7	24	80.0	28	86.7	28	93.3	28	93.3	2	6.7
Packing and shipping,	9	32.1	19	67.9	25	89.3	26	92.9	26	92.9	27	96.4	1	3.6
Drawing,	1	4.8	4	19.0	5	23.8	11	52.4	12	57.1	16	76.2	5	23.8
Soldering,	1	6.7	1	6.7	10	66.7	15	100.0	15	100.0	15	100.0	—	—
Hammering,	2	18.2	7	63.6	10	90.9	11	100.0	11	100.0	11	100.0	—	—
Less than ten workers,	5	11.4	14	31.8	19	43.2	23	52.3	30	68.2	33	75.0	11	25.0
Miscellaneous machine processes,	—	—	6	40.0	8	53.3	12	80.0	14	93.3	14	93.3	1	6.7
More than one process,	—	—	5	38.5	5	38.5	7	53.8	11	84.6	11	84.6	2	15.4
Total,	106	17.6	255	43.7	395	66.2	472	79.9	529	93.6	555	93.9	42	7.0

TABLE II. (a). — *Average Weekly Earnings: by Age Groups.*

Age.	NUMBER OF WORKERS EARNING —							Total.
	Under \$4.	\$4 and Under \$5.	\$5 and Under \$6.	\$6 and Under \$7.	\$7 and Under \$8.	\$8 and Under \$9.	\$9 and Over.	
14 and less than 16, .	23	9	4	—	—	—	—	36
16 and less than 18, .	20	28	3	2	1	—	1	55
18 and less than 21, .	17	46	29	8	6	4	3	113
21 and less than 25, .	8	17	35	22	10	4	9	105
25 and less than 30, .	4	14	19	11	12	6	9	75
30 and less than 35, .	3	8	10	6	5	1	4	37
35 and less than 40, .	4	3	7	7	4	1	2	28
40 and less than 45, .	—	2	5	3	1	—	1	12
45 and less than 50, .	—	2	4	1	4	—	1	12
50 and less than 55, .	1	—	2	2	—	—	1	6
55 and less than 60, .	—	—	—	—	—	2	1	3
Total, . . .	80	129	118	62	43	18	22	482

NOTE. — Data concerning age were not available for 115 workers.

TABLE II. (b). — *Average Weekly Earnings: by Age Groups (Cumulative).*

Age.	NUMBER OF WORKERS EARNING —						
	Under \$4.	Under \$5.	Under \$6.	Under \$7.	Under \$8.	Under \$9.	\$9 and Over.
14 and less than 16, .	23	32	36	36	36	36	—
16 and less than 18, .	20	48	51	53	54	54	1
18 and less than 21, .	17	68	92	100	106	110	3
21 and less than 25, .	8	25	60	82	92	96	9
25 and less than 30, .	4	18	37	48	60	66	9
30 and less than 35, .	3	11	21	27	32	33	4
35 and less than 40, .	4	7	14	21	25	26	2
40 and less than 45, .	—	2	7	10	11	11	1
45 and less than 50, .	—	2	6	7	11	11	1
50 and less than 55, .	1	1	3	5	5	5	1
55 and less than 60, .	—	—	—	—	—	2	1
Total, . . .	80	269	327	389	452	450	22

NOTE. — Data for age were not available for 115 workers.

TABLE III. — *Average Weekly Earnings: by Establishments (Cumulative).*

ESTABLISHMENT.	PER CENT. OF WORKERS EARNING —						
	Under \$4.	Under \$5.	Under \$6.	Under \$7.	Under \$8.	Under \$9.	\$9 and Over.
No. 1,	19.8	51.5	79.2	91.4	97.0	98.3	1.7
No. 2,	18.4	34.2	56.8	69.5	82.6	90.0	10.0
No. 3,	13.3	53.3	73.3	80.0	93.3	100.0	—
No. 4,	—	—	100.0	100.0	100.0	100.0	—
No. 5,	—	50.0	50.0	50.0	50.0	50.0	50.0
No. 6,	13.2	39.5	55.3	65.8	78.9	86.8	13.2
No. 7,	—	—	—	9.1	36.4	36.4	63.6
No. 8,	—	—	40.0	80.0	80.0	80.0	20.0
No. 9,	17.6	41.2	47.1	70.6	82.4	100.0	—
No. 10,	—	—	—	—	25.0	25.0	75.0
No. 11,	—	50.0	50.0	75.0	75.0	100.0	—
No. 12,	—	50.0	50.0	100.0	100.0	100.0	—
No. 13,	—	—	—	50.0	50.0	50.0	50.0
No. 14,	—	—	—	33.3	100.0	100.0	—
Total,	17.6	42.7	66.2	79.1	88.6	93.9	7.9

TABLE IV. (a). — *Hours of Labor and Average Weekly Earnings.*

AVERAGE HOURS PER WEEK.	NUMBER OF WORKERS EARNING —							Total.
	Under \$4.	\$4 and Under \$5.	\$5 and Under \$6.	\$6 and Under \$7.	\$7 and Under \$8.	\$8 and Under \$9.	\$9 and Over.	
Less than 30,	5	1	—	—	—	—	—	6
30 and less than 34,	4	7	3	1	—	—	—	15
34 and less than 38,	14	8	5	2	1	2	3	35
38 and less than 42,	21	18	9	14	6	7	2	77
42 and less than 46,	28	33	32	14	13	5	10	135
46 and less than 50,	20	58	74	19	17	5	15	208
50 and less than 54,	—	3	—	3	2	1	2	11
54 and over,	—	—	—	1	1	—	—	2
Total,	92	128	123	54	40	20	32	489

NOTE. — Data concerning hours were not available for 108 workers.

TABLE IV. (b). — *Hours of Labor and Average Weekly Earnings of Piece and Time Workers.*

AVERAGE HOURS PER WEEK.	NUMBER OF PIECE AND TIME WORKERS EARNING —																TOTAL.	
	UNDER \$4.		\$4 AND UNDER \$5.		\$5 AND UNDER \$6.		\$6 AND UNDER \$7.		\$7 AND UNDER \$8.		\$8 AND UNDER \$9.		\$9 AND OVER.					
	Piece.	Time.	Piece.	Time.	Piece.	Time.	Piece.	Time.	Piece.	Time.	Piece.	Time.	Piece.	Time.	Piece.	Time.		
Less than 30,	1	4	-	1	-	-	-	-	-	-	-	-	-	-	1	5		
30 and less than 34,	-	4	-	7	-	3	1	-	-	-	-	-	-	-	1	14		
34 and less than 38,	2	12	-	8	4	1	1	1	1	-	-	-	3	-	13	22		
38 and less than 42,	2	19	4	14	3	6	9	5	6	-	6	1	1	1	31	46		
42 and less than 46,	3	25	7	26	9	23	7	7	6	7	4	1	10	-	46	89		
46 and less than 50,	1	19	1	57	2	72	3	16	8	9	2	3	11	4	28	180		
50 and less than 54,	-	-	-	3	-	-	-	3	-	2	-	1	1	1	1	10		
54 and over,	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	2		
	9	83	12	116	18	105	21	33	21	19	14	6	26	6	121	368		
Total,	92	128	128	133	133	54	49	20	32	489								

NOTE. — Data concerning hours were not available for 108 workers.

TABLE V. — *Fluctuations of Employment among 391 Workers.*

OCCUPATIONS.	PER CENT. OF WORKERS EMPLOYED FOR SPECIFIED NUMBER OF MONTHS.											
	12	11	10	9	8	7	6	5	4	3	2	1
Total,	52.7	85.7	94.6	96.2	97.2	98.5	99.2	99.5	99.7	100	100	100
Brush-making,	53.8	84.3	95.1	98.0	98.0	99.0	99.0	99.0	100.0	100	100	100
Finishing,	61.6	90.9	98.0	98.0	99.0	99.0	99.0	100.0	100.0	100	100	100
Setting,	43.1	78.4	90.2	92.2	94.1	94.1	100.0	100.0	100.0	100	100	100
Nailing,	57.7	96.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Cementing,	53.8	76.5	88.2	88.2	88.2	100.0	100.0	100.0	100.0	100	100	100
Packing and shipping,	46.2	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3	100	100	100
Drawing,	50.0	71.4	92.9	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Soldering,	16.7	91.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Hammering,	50.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100
Miscellaneous,	39.6	84.9	90.6	92.5	96.2	100.0	100.0	100.0	100.0	100	100	100

NOTE. — Includes only those workers whose payments extend over a period of eleven months or more previous to the taking of the transcript.

DIAGRAM I.
CURVE SHOWING PER CENT OF UNEMPLOYMENT
FOR 391 BRUSH WORKERS
DURING 52 WEEKS.

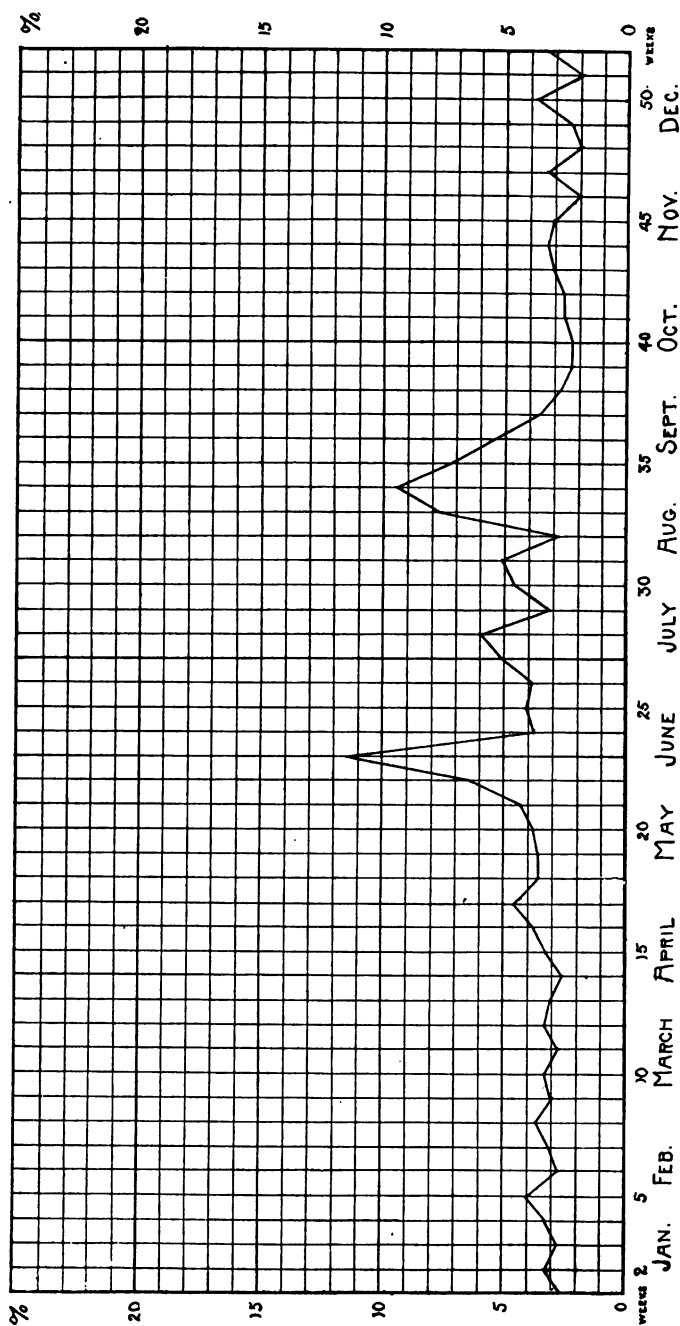


TABLE VI. — *Home Conditions and Weekly Earnings.*

HOME CONDITIONS.	NUMBER OF WORKERS EARNING —							Total.
	Under \$4.	\$4 and Under \$5.	\$5 and Under \$6.	\$6 and Under \$7.	\$7 and Under \$8.	\$8 and Under \$9.	\$9 and Over.	
Living at home, . . .	60	119	98	53	35	17	27	418
Living away from home,	11	9	20	8	8	2	5	63
Total, . . .	80	128	118	61	43	19	32	481

NOTE. — Data concerning home conditions were not available for 116 workers.

PRISON LABOR.

Brushes are manufactured by prison labor in two Massachusetts institutions, — the State Prison in Charlestown and the house of correction connected with the Middlesex County Jail in East Cambridge. A list of the varieties made, together with the wholesale rates at which they are sold to State institutions,¹ may be found on pages 12-15 of the descriptive catalogue of prison-made articles issued by the Prison Commission in November, 1913. This list comprises: —

Made in Charlestown: —

Floor brushes.
Dust brushes.
Window brushes.
Whitewash brushes.

Made in Cambridge: —

Floor-waxing brushes.
Rice root dandy brushes.
Scrub brushes.
Shoe brushes.
Shoe polishers.
Dauber brushes.
Stove brushes.
Radiator brushes.
Stair brushes.
Jap sweepers.
Jumbo sweepers.

¹ "The price of all articles and materials supplied by the prisons to the public institutions named in this act shall conform as nearly as may be to the wholesale market rates for similar goods manufactured outside of the prisons. Any difference of opinion in regard to price may be submitted to arbitration in the manner provided in section two of this act." (Section 4, chapter 414, Acts of 1910.)

State institutions are obliged by law to purchase from the prisons all supplies made by prison labor, but brushes are among the few prison-made commodities which can also be sold in the open market, and the sales to private parties far exceed in value those made to State institutions. The annual output is kept very low, however, by the legal restrictions, which prohibit more than 80 prisoners in the State working at the manufacture of brushes at one time, — 35 in the State Prison and 45 in the house of correction. During the year ending Sept. 30, 1912, the receipts from the sales of brushes at the State Prison were \$21,145.60, and the excess of receipts over expenditures was \$4,602.90. The receipts from sales at the house of correction for the same year were \$9,782.52, with a gain of \$1,604.96 to the institution.¹

WAGES OF WOMEN IN THE CORSET FACTORIES IN MASSACHUSETTS.

STATISTICS OF MANUFACTURE.

The manufacture of corsets, while not one of the large industries of the United States, is conspicuous as one of those which is carried on mainly by women. According to the thirteenth census, 87 per cent. of all the corset workers in the country are women.² In the strictly corset-making occupations few men are employed, except for the heavier work, such as cutting and ironing.

The thirteenth census gives the average number of corset workers in the country for the year 1909 as 17,564. Massachusetts, with 2,156 persons engaged in the industry, stands fourth on the list of States. Connecticut stands first, with 7,177 persons; Michigan second, with 2,875; and New York third, with 2,787. Massachusetts is also fourth with regard to the amount of capital invested (\$1,857,397) and the value of the annual product (\$3,751,641). In Massachusetts over nine-tenths (91.3 per cent.) of the total employees are women.²

The manufacture of ready-made corsets in Massachusetts is confined to three localities: Worcester, Springfield and

¹ Report of the Board of Prison Commissioners for 1912, pp. 146, 152.

² United States, thirteenth census, Vol. VIII., p. 691.

West Brookfield. A study was made of the eight factories in these places, six in Worcester, one in Springfield and one in West Brookfield. The factories differ greatly in size, from a large establishment employing over 1,600 persons to the smallest factory, with less than 100 workers.

In all, wage records were secured for 2,388 women. These represent the total number of women on the pay rolls of the factories at the time when the study was made (September and October, 1913).

The following groups were not included in the tabulation:—

1. Workers who were employed less than four weeks during the year.

2. Those for whom the factory records were defective or incomplete.

3. Those working in paper-box shops connected with the corset factories.

These three groups represent 278 persons, leaving 2,110 persons who are included in the following tables.

In addition to the wage records, additional information in the form of personal data was secured for 680 persons. This includes information as to age, nativity, marital condition, living arrangements and industrial history.

Statistics of Manufacture (Corsets).

	CENSUS RETURNS ¹ FOR 1909.		Statistics of Manufactures for 1911, Massachusetts.
	United States.	Massachusetts.	
1. Number of establishments,	138	10	11
2. Capital,	\$12,033,421	\$1,857,397	\$2,291,741
3. Value of products,	\$33,257,187	\$3,751,641	\$4,616,274
4. Value added by manufacture (product less cost of materials),	\$17,616,772	\$2,144,442	\$2,466,080
5. Cost of materials used, including fuel and rent of power,	\$15,640,415	\$1,607,199	\$2,150,244
6. Expense (rent, tax, contract, other),	\$3,746,871	\$463,273	— ²
7. Salaries,	\$2,870,536	\$399,665	— ²
8. Wages,	\$6,464,144	\$735,465	\$977,795
9. Total cost,	\$28,721,966	\$3,175,592	— ²
10. Profit,	\$4,535,221	\$576,049	— ²
11. Employees:—			
Number of salaried officials and clerks,	1,956	165	— ²
Average number of wage earners employed during the year,	17,564	1,989	2,701
Male, sixteen years of age and over, December 15,	2,291	165	248 ³
Female, sixteen years of age and over, December 15,	15,234	1,712	2,129 ³
Female, under sixteen years of age, December 15,	555	95	414 ⁴

¹ United States, thirteenth census, Vol. viii., p. 524 ff.

² Not taken by the Massachusetts Bureau of Statistics.

³ This is the number of employees eighteen years of age and over December 15.

⁴ This is the number of employees under eighteen years of age December 15.

Manufacture of Corsets by States.¹

STATE.	Number of Estab- lishments.	Number engaged in Industry.	Capital.	Value of Product.
Connecticut,	17	7,177	\$6,931,145	\$12,814,736
Illinois,	16	1,663	1,306,114	2,711,213
Massachusetts,	10	2,156	1,857,397	3,751,641
Michigan,	14	2,875	3,088,479	4,367,516
New Jersey,	11	2,013	1,857,156	5,336,348
New York,	47	2,787	2,351,340	5,160,686
Ohio,	4	47	47,164	67,226
Pennsylvania,	6	626	351,077	724,173
All others, ²	13	267	293,549	323,648
Total in United States,	138	-	-	-

¹ United States, thirteenth census, Vol. VIII., p. 666. Figures given are for 1909.² Arkansas 1, California 2, Georgia 1, Indiana 2, Maryland 2, Minnesota 2, Missouri 2, New Hampshire, 1.

THE PROCESS OF MANUFACTURE.

I. *Sewing Machines used.*

Most of the machinery used in making corsets consists of varieties of the sewing machine, mounted on long, continuous tables. Power is transmitted from shafting under the table by means of a belt, or by individual electric motors on each machine. The principal kinds of machines are as follows:—

Single Needle Machines.—These machines are used for plain seaming and joining, etc., where only one row of stitching is required. Both chain and lock stitch are used for this purpose. The machines are much like the family sewing machines, except for the electric drive and the treadle used to start or stop the machine, and the fact that they are built more substantially for manufacturing purposes. Sometimes the treadle is operated by knee pressure instead of by foot; in either case the pressure required to release the clutch is very slight. The machines feed automatically, and can be operated at a maximum speed of approximately 3,000 stitches per minute.

The usual type is the "flat-bed," which has the machine-bed flush with the surface of the table; the operative has

to bend over to do her work, but is able to rest her arms on the table. Another type, the high "post" machine, is going out of use; it allows a more erect position, as the needle-plate is from six to eight inches above the level of the table, but it gives no rest for the arms, and the operative has to hold them up continually while guiding her work.

Multiple Needle Machines. — These machines are used where parallel rows of stitching are required, as in the case of the operations of strip-stitching or for lap-seaming. They are equipped with from two to twelve needles and a like number of shuttles, and make simultaneously a corresponding number of rows of stitching. The machine-bed is raised two or three inches above the level of the table; otherwise these machines do not differ materially from those just described. They always sew a lock-stitch, and will sew a strip on the upper and under sides of the corset, insert an interlining, and, by means of guides in the presser-foot, sew in steels in one operation.

Flossing Machines. — These machines differ from the plain sewing machines already described in that they do not feed automatically and that each stitch ordinarily requires two separate pressures of the foot on the treadle. They are used for all work which requires stitches of varying length, as for sewing lace on corsets after the steels are in or for "barring;" that is, making the short rows of stitching across the ends of the steel pockets, to close them so that the steels cannot slip up or down. Any ornamental stitching not performed by hand on corsets is done with the flossing machine, as it can be adapted to any kind of embroidery stitch almost as easily as a needle and thread. As this machine has no feed, the fabric has to be moved by hand to the points where a stitch is to begin and end, and the needle descends at the will of the operative, who controls it by a slight pressure of her foot on the front or toe of the treadle. The pressure for starting the machine is made alternately by the heel and toe pressing the treadle down as far as it will go in each direction. Ordinarily the machines stop at the completion of each stitch, and if a continuous row of stitching is desired it is necessary to hold the treadle in a

horizontal position, when the needle continues to form stitches until the treadle is pushed down in one direction or the other. This continual starting and stopping makes work on a flossing machine much heavier than ordinary stitching, and in one of the factories visited this kind of work is done entirely by men or boys.

Any kind of work done on a flossing machine is often loosely termed "flossing," regardless of the exact nature of the work, whether it be tacking, trimming or barring.

II. *The Occupations.*

Cutting. — Corsets are usually made of coutil, batiste or other strong cotton cloth. The material is laid on a cutting table in from twenty-four to ninety-six thicknesses, a metal or wooden form placed over it, and a sharp knife run around the form, cutting the material into pieces of the required shape and size. The long, narrow strips of material (known as strip or stripping) which are attached to the under side of the corsets to make bone casings are cut out by a power machine with circular knives. Cutting is always done by men because of the strength required to cut through many thicknesses of cloth and to handle heavy rolls of material.

Folding. — The first operation on the corset after it is taken from the cutters to the women operatives is folding. This simple process is the preliminary preparation for certain seams. The pieces are fed into a machine which turns over a narrow fold of the cloth and presses it firmly down, so that when the pieces go to the stitcher this fold can be stitched down flat, making what is called a lap seam. In many factories folding is not done as a separate operation, but the same machine that stitches the seam folds the cloth as it is fed in. In the case of heavy material folding is necessary.

Joining, Seaming or Closing. — The pieces go next to the girls who do the stitching known variously as assembling, seaming, joining or closing. This operation joins together the pieces which are to form the complete garment. The pieces are stitched together either with a plain seam, by a

one-needle machine (the edges being left unfinished and covered later by stripping), or with a lap seam, where the edges are turned under and stitched down by a two-needle machine. This operation is known as lap-seam felling. The plain seaming is the simplest machine stitching there is. Where the pieces to be joined together are cut on the bias, or crossways of the cloth, the operation is called bias seaming, and is more difficult on account of the tendency of the bias edge to stretch and get out of shape unless skillfully handled. The rates on this work vary with the number of pieces in the garment, the length of the seams and the grade of the garment.

Goring. — After the seams of the corset have been closed the gores are set in. These are small V-shaped inserts, which are stitched with a bias seam. The operation requires skillful and careful work to make a smooth, neat seam, and is one of the highest paid. Many styles of corsets do not have gores.

Putting on Belts. — The tape which forms the waistband inside the corset is pasted on by hand or by machine, or is tacked or basted by the flossing machine. Either of these operations is known as "belts." The basting stitches are pulled out of the belt after the strips and steels are stitched across it, as these are enough to keep it in place.

Steel Setting. — The front steels (or clasps) and the side steels are wider and stronger than the others, and are attached singly to the under side of the corset by strips of facing. The front steels are first laid in a fold of the cloth with the clasps projecting through slits; this operation is called steel setting, laying or placing.

Steel Stitching. — The steels are then stitched in place with one or two rows of stitching. For the side steels a two-needle machine is used, as a row of stitching must be made on each side of the steel. The steel is guided into the space between the needles through holes in a steel arm which is screwed to the bed of the machine. The operation requires skill to keep the stitching as near as possible to the steel without breaking the needle against it. It is a skilled operation and one of the best paid.

Stripping. — The narrow, flexible steels (or “wires”) which are used in pairs or in threes at the sides of the corset can be stitched in like the front and side steels, but are sometimes pushed in by hand. Stripping is the process of stitching “strip” or facing to the under side of the corset to case these wires. There are two kinds of strip, — either a finished tape is used or strips of material cut out and folded along both edges by machine and wound into large rolls (winding stripping). The operatives by using multiple needle machines make three or four rows of stitching at once, according to the number of wires to be inserted, — three rows for two wires, four rows for three wires. The more needles the machine has the greater the skill required, and piece rates for stripping vary accordingly.

Back-stitching. — The back of a corset usually has a pair of wires at each side, which are inserted, like the side wires, by the boners (see “boning”), after back strips have been stitched on with a four-needle machine. Back-stitching is the process of stitching on these back strips, which differs from ordinary stripping in that the raw edge of the corset has to be turned in under the strip. Individual styles of corset, however, vary from this general practice.

In all of the stitching operations here described finger pricks by the needle are of somewhat frequent occurrence.

First Examining and Mending. — At this point the corsets are examined and any defects in stitching are remedied by special menders, repair girls or by the examiners themselves. Menders are paid by the hour, and in some factories their wage for the time they spend on each piece of mending is entered as a charge against the wage of the operative whose faulty stitching made it necessary.

Boning. — The corsets next go to the boners, — young girls who push the wires (or “bones”) under the casing strips by hand.¹ They use a small wooden tool like a crochet hook to open the end of the casing and work with remarkable speed, inserting two or three bones at a time, but the work requires little skill. From these beginners the

¹ In many factories the wires are put in at the same time the cloth strips are put on and therefore no boners are employed.

forewomen, who are watching for signs of ability, select girls to learn the more difficult operations. Although this process is still called boning, very little whalebone is now used in ready-made corsets, the "bones" being strips of flexible steel.

Barring or Flossing. — When the bones have been pushed into their cases the open ends are closed with a short row or "bar" of stitching. On the more expensive corsets these ends after being barred are stayed or reinforced by satin-stitching across them with the flossing machine. Sometimes both these operations are called flossing.

Shaping. — The corset now has all its steels and wires in and is ready to be shaped. The shaper trims the top and bottom edges of the corset into a smooth curve, either with a pair of scissors or by machine. The scissors are large and heavy, as they have to cut through several thicknesses, and they are wrapped with cloth and felt to protect the hands. The shaping machine consists of two circular knives revolved by power, one upon the other. The operative places the edge of the corset between the knives, the edges of which are guarded, and guides it through. This operation is of importance as it determines in part the outline of the corset.

Binding. — The shaped top and bottom edges are next bound with a strip of braid or other folded material, using one or two rows of stitching. Sometimes a draw string is put in the upper edge, and hose supporters on the lower edge, in the process of binding.

Hose supporters are usually stitched in with the bottom binding, but are occasionally put on separately. The operation called "hose supporters" is not making the supporters but simply stitching or sewing them on. The corset factories in Massachusetts do not manufacture their own hose supporters, but buy them ready-made from garter and suspender factories.

Cutting Ends, End-stitching and Finishing. — The unfinished ends of binding and loose ends of thread left by the stitchers are next cut off, and in the better grade of corsets the raw edges of binding are finished at the end by hand or machine stitching.

Eyeletting and Hook-punching. — These are the two processes for which a punch machine is used. The eyeletting machine punches the rows of holes for corset laces. Most eyeletting machines make only one row at a time; those which make both rows at once are less commonly used. The operative places the corset in position and starts the machine by a slight pressure of the foot. The corset is then fed along automatically under two punches, the first of which cuts out circular holes in the cloth into which the second inserts metal rims or eyelets, folds them over and presses them down tightly. The hook-punch punches in the hook and eye which fasten the corset below the front steels. This machine differs from the other just as the flossing machine differs from the plain stitching machine, as it does not feed automatically, and separate movements of the foot are required for each hook and each eye. The hook-punch jars and shakes the operative considerably, and both these machines involve much heavier, though not more skilled, work than the plain stitching machines. In one factory only was either of these machines found run by men or boys. The punches are not guarded, but no accident to operatives on these machines was heard of.

Top Trimming, Lace Stitching, Lace Tacking and Flossing. — The tops of corsets are variously ornamented. Usually lace or embroidery (known as Hamburg) is used. The trimming is first stitched along the top edge of the corset, and its lower edge is then tacked down at intervals between the steels with the flossing machine or (in high-grade corsets) by hand. Sometimes top trimming and binding are done at the same time, or (in the cheapest corsets) top trimming takes the place of top binding.

Stringing Lace. — The lace used for trimming is sometimes threaded with ribbon before it is put on the corset. This is done by hand or by machine.

Hand Sewing. — The hand sewing on corsets is usually confined to the few stitches required to finish the garment, such as sewing down the front of the trimming, tacking on a bow or putting on the skirt hook. More expensive corsets are trimmed entirely by hand.

Ironing. — The corset is now completely made and taken to the ironing room. Before the corsets are ironed the operatives dampen them by holding them in steam from a pipe over a sink. Instead of steam sometimes a cold vapor is used. The steam pipes are sometimes in a room apart from the ironing room (or "laundry") and sometimes merely screened off from it by a wooden partition. No provision is made to prevent the operatives from breathing in the steam while standing at the pipes with the corsets in their hands. Various methods of ironing corsets are in use. In most factories the irons are heated by gas or electricity and propelled by hand; the ironers are either men or women, and do their work standing. In two of the factories visited automatic irons are in use; these are both heated and propelled by electricity, moving back and forth across a padded board while the ironer sits and shifts the corset about so that every part comes under the iron. It was stated that these machines, costing several hundred dollars each, greatly lessen labor cost, as the girls who run them can be hired at half the cost of men for hand-ironing. Dampening and ironing stiffen and shape the corsets.

Matching, Numbering, Measuring and Stamping. — The finished corsets are next measured, matched and stamped with their size number and style number or name. Sometimes a label with the name of the style has already been stitched in by the binder, stripper or hand-sewer.

Second Examining, Final Examining or Inspecting. — The corsets are finally inspected for imperfections, and when these have been remedied they are ready for shipping.

Clasping, Rolling and Boxing. — The final processes through which the corset passes are clasping (fastening the two parts together), rolling and boxing. Rolling is done by a hand machine having a fork-shaped projection in which each corset is placed. By turning a handle the fork is made to revolve and the corset rolls loosely around it. This method of rolling has the advantage of preventing unnecessary handling, but is not used in all factories. Sometimes boxing includes wrapping the corsets in tissue paper.

Position at Work. — The girls sit for practically all of their occupations, except hand ironing, examining, measuring,

stamping, rolling and boxing. Some of these can be done either standing or sitting, but in all cases the girls while standing can move about freely. Positions while sitting at the stitching machines vary according to the kind of machine used.

Manufacture of Accessories. — Boxes in which the corsets are packed are sometimes made on the premises. One factory has an up-to-date printing plant from which its advertising matter is issued. None of the factories in the State manufacture the eyelets, corset laces, steels or wires, hose supporters or other accessory parts of corsets.

THE WAGE SITUATION.

The average weekly earnings of the whole number of corset workers studied, as shown in Table I. (a) and (b), exhibit wide variation, from the group (9.6 per cent.) who earned less than \$4 a week in the year preceding the investigation, to the larger group of better-paid workers (16.4 per cent.), who earned \$9 or more a week. The largest number of workers (18 per cent.) are found in the group who earned \$6 and less than \$7. On the whole, more than half of the workers (53.5 per cent.) received an average of less than \$7 a week, and 35.5 per cent. received less than \$6 a week.

The scale of wages varies greatly among the different occupations. The ironers, whose work requires strength and speed, received higher wages than any other group of workers; nearly one-half (48.1 per cent.) earned \$9 or more a week. The shapers, who perform a process requiring a high degree of accuracy, also received markedly higher wages than the majority of workers; 38 per cent. earned \$9 or more a week. Folding, on the other hand, is one of the lowest paid occupations. No folder earned as much as \$8 a week, and 45.5 per cent. earned less than \$4. Hand sewing, boning and steel setting were also very poorly paid; more than a fifth of the workers in each of these occupations earned less than \$4 a week, and 63.9 per cent., 66.7 per cent., and 57.1 per cent., respectively, earned less than \$6 a week.

A comparison of the wage level in different establishments

has important bearing upon the question of the effect upon the industry of paying a higher rate of compensation to the minimum wage earner. Striking, in this connection, is the degree of variation in the wages paid by different establishments as indicated by Table III. Establishment No. 7 paid weekly earnings of less than \$6 to only 13.3 per cent. of its workers, while Establishments Nos. 4 and 6 paid less than \$6 to 63.8 per cent. and 56 per cent. respectively. In each of the two latter establishments the percentage of workers who earned as much as \$9 a week is almost negligible, whereas Establishment No. 7 paid \$9 or more a week to 43.4 per cent. of its workers. Establishments Nos. 4 and 6 paid less than the average for the industry in every instance. Reasons for the existing difference of wage levels within the State claim attention before the defence of low wages, on the basis of interstate and foreign competition. The foregoing presentation sets forth the fact that the corset industry in Massachusetts does show great variation in the wages of different establishments.

HOURS.

The failure of many factories to keep records of the number of hours worked by each employee each week has been noted in the report of the commission.¹ The amount of available material, though small, is valuable as an indication of the general custom of the corset factories with regard to the usual length of the working week. Table IV. shows that 121 out of the 146 women for whom records of hours were available had an average working week of fifty hours or more, but that in no single instance did the average working week reach fifty-four hours. The number available is insufficient for the basis of a deduction of the relation between hours and earnings.

AGE.

Information as to the age of the women employees in the corset factories was obtained for 667 workers. According to the summary of this material given in Table II., the ma-

¹ See p. 10.

jority of the workers are less than twenty-five years of age. The relation between age, which may often be translated into terms of years of experience in the industry, and earnings is made clearly apparent in this table. One-half of the workers under sixteen years of age earned less than \$4 a week, but increasingly smaller proportions of the succeeding age-groups earned the smaller amounts. Correspondingly, up to thirty-five years, the largest number of workers is found with successively higher earnings. After the age of thirty-five is reached the constant relation between age and earnings is no longer apparent.

UNEMPLOYMENT.

Table V., which presents an analysis of the material concerning the time of unemployment, is based on the records of persons whose payments extended over a period of eleven months or more, previous to the taking of the transcript of the pay roll. This selected group of course constitutes the steadiest body of workers, but it seemed necessary to exclude all others to avoid the danger of attributing unfairly to the industry the absence of persons who, for any one of a variety of reasons, left the factories permanently in the course of the year. One-fourth (25.7 per cent.) of the workers were employed for the full fifty-two weeks of the year; that is, took no vacations and were not absent from the factory for any other reason. More than three-fourths (77 per cent.) worked for eleven months. There is noticeable a marked variation in the number working the year around according to occupation. Ironing alone shows a majority at work for the whole time. No occupation, however, shows less than three-fourths of its workers employed for ten months.

Diagram I. shows that the largest amount of unemployment occurred in the first part of July, a fact which is to be explained by the tendency to take vacations at that time. The busiest season occurs in the autumn and early winter. Marked seasonal variation is not characteristic of the industry.

HOME CONDITIONS.

Of the total number of corset workers studied, data concerning home conditions were available for only 672, the majority of whom, 565 (84.1 per cent.), were reported as living at home.

Table VI. shows that of those living at home, 11.9 per cent. earned under \$4 per week as against 6.5 per cent. of the group living away from home. On the other hand, of the workers living at home, only 53, or 9.4 per cent., earned \$9 and over, while of those living away, 18, or 16.8 per cent., had earnings of \$9 and over. Only in rare instances is it possible for the workers earning the smaller amounts to live away from home without some supplement to the wage.

TABLE I. (a). — *Average Weekly Earnings : by Occupations.*

OCCUPATIONS.	NUMBER AND PER CENT. OF WORKERS EARNING —																Total.	
	UNDER \$4.		\$4 AND UNDER \$5.		\$5 AND UNDER \$6.		.\$6 AND UNDER \$7.		\$7 AND UNDER \$8.		\$8 AND UNDER \$9.		\$9 AND OVER.		Num-ber.	Per Cent.		
	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.				
Joining and seaming,	4	1.3	19	6.2	40	13.1	60	19.6	63	20.6	61	19.9	59	19.3	306	100		
Stripping,	6	2.9	12	5.8	30	14.6	32	15.5	28	13.6	35	17.0	63	30.6	206	100		
Steel stitching,	8	4.5	12	6.9	30	17.1	31	17.7	26	14.9	33	18.9	35	20.0	175	100		
Hand sewing,	47	27.8	34	20.1	27	16.0	26	15.4	14	8.3	14	8.3	7	4.1	169	100		
Examining,	9	6.0	14	9.2	30	19.9	42	27.8	34	22.5	13	8.6	9	6.0	151	100		
Boning,	27	22.5	26	21.7	27	22.5	21	17.5	11	9.2	4	3.3	4	3.3	120	100		
Top trimming,	3	2.7	7	6.3	25	22.6	21	18.9	19	17.1	17	15.3	19	17.1	111	100		
Binding,	8	7.2	6	5.4	16	14.4	20	18.0	25	22.5	13	11.7	23	20.8	111	100		
Ironing,	—	—	1	1.3	3	3.8	9	11.4	8	10.1	20	25.3	38	48.1	79	100		
Back stitching,	1	1.6	10	15.9	5	7.9	12	19.1	14	22.2	6	9.5	15	23.8	63	100		
Steel setting,	12	21.4	9	16.1	11	19.6	15	26.8	3	5.4	4	7.1	2	3.6	56	100		
Flossing,	—	—	3	6.5	10	21.7	5	10.9	5	10.9	10	21.7	13	28.3	46	100		
Folding,	20	45.5	7	15.9	8	18.2	7	15.9	2	4.5	—	—	—	—	44	100		
Shaping,	2	4.8	5	11.9	2	4.8	6	14.3	6	14.3	5	11.9	16	38.0	42	100		
Belting,	5	12.8	2	5.1	2	5.1	5	12.8	4	10.3	12	30.8	9	23.1	39	100		

TABLE I. (a). — *Average Weekly Earnings: by Occupations — Concluded.*

OCCUPATIONS.	NUMBER AND PER CENT. OF WORKERS EARNING —														TOTAL.	
	UNDER \$4.		\$4 AND UNDER \$5.		\$5 AND UNDER \$6.		\$6 AND UNDER \$7.		\$7 AND UNDER \$8.		\$8 AND UNDER \$9.		\$9 AND OVER.			
	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.	Num-ber.	Per Cent.
Mending,	1	2.7	8	21.6	3	8.1	3	8.1	6	16.2	15	40.6	1	2.7	37	100
Boxing,	5	13.9	7	19.4	5	13.9	6	16.7	5	13.9	2	5.5	6	16.7	36	100
Stitching supporters,	2	5.9	5	14.7	3	8.8	3	8.8	8	23.6	10	29.4	3	8.8	34	100
General work,	2	6.1	3	9.1	6	18.2	4	12.1	1	3.0	10	30.3	7	21.2	33	100
Checking and ticketing,	—	—	—	—	3	10.0	10	33.3	10	33.3	6	20.0	1	3.4	30	100
Eyeletting and book-punching,	2	7.7	6	23.1	6	23.1	2	7.7	4	15.4	3	11.5	3	11.5	26	100
Tracing orders,	2	10.0	1	5.0	5	25.0	5	25.0	2	10.0	5	25.0	—	—	20	100
Matching,	—	—	4	26.7	3	20.0	4	26.7	1	6.6	3	20.0	—	—	15	100
Giving out work,	—	—	—	—	1	10.0	4	40.0	1	10.0	3	30.0	1	10.0	10	100
More than one occupation,	18	20.2	11	12.3	14	15.7	17	19.1	15	16.9	6	6.8	8	9.0	89	100
Less than ten workers,	9	23.1	4	10.3	7	17.9	7	17.9	5	12.8	4	10.3	3	7.7	39	100
Occupation not specified,	13	52.2	2	8.7	4	17.4	2	8.7	2	8.7	—	—	1	4.3	23	100
Total,	204	9.6	219	10.4	326	15.4	379	13.0	323	15.3	314	14.9	346	16.4	2,110	100

TABLE I. (b). — *Average Weekly Earnings: by Occupations*
(Cumulative).

OCCUPATIONS.	PER CENT. OF WORKERS EARNING —						
	Under \$4.	Under \$6.	Under \$8.	Under \$7.	Under \$6.	Under \$9.	\$9 and Over.
Joining and seaming, . . .	1.3	7.5	20.6	40.2	60.8	80.7	19.3
Stripping,	2.9	8.7	23.3	38.8	52.4	69.4	30.6
Steel stitching,	4.5	11.4	23.6	46.3	61.1	80.0	20.0
Hand sewing,	27.8	47.9	63.9	79.3	87.6	95.9	4.1
Examining,	6.0	15.2	35.1	62.9	85.4	94.0	6.0
Boning,	22.5	44.2	66.7	84.2	93.3	96.7	3.3
Top trimming,	2.7	9.0	31.5	50.5	67.6	82.9	17.1
Binding,	7.2	12.6	27.0	45.0	67.6	79.2	20.8
Ironing,	—	1.3	5.1	16.5	26.7	51.9	48.1
Back stitching,	1.6	17.5	25.4	44.4	66.7	76.2	23.8
Steel setting,	21.4	37.5	57.1	83.9	89.3	96.4	3.6
Flossing,	—	6.5	28.3	39.1	50.0	71.7	28.3
Folding,	45.5	61.4	79.5	95.5	100.0	100.0	—
Shaping,	4.8	16.7	21.4	35.7	50.0	61.9	38.1
Belting,	12.8	17.9	23.1	35.9	46.2	76.9	23.1
Mending,	2.7	24.3	32.4	40.5	56.8	97.3	2.7
Boxing,	13.9	33.3	47.2	63.9	77.8	83.3	16.7
Stitching supporters, . .	5.9	20.6	29.4	38.2	61.8	91.2	8.8
General work,	6.1	15.2	33.3	45.5	48.5	78.8	21.2
Checking and ticketing, .	—	—	10.0	43.3	76.7	96.6	3.4
Eyeletting and hook- punching,	7.7	30.8	53.8	61.5	76.9	88.5	11.5
Tracing orders,	10.0	15.0	40.0	65.0	75.0	100.0	—
Matching,	—	26.7	46.7	73.3	80.0	100.0	—
Giving out work,	—	—	10.0	50.0	60.0	90.0	10.0
More than one occupa- tion,	20.2	32.6	48.3	67.4	84.3	91.0	9.0
Less than ten workers, .	23.1	33.3	51.3	69.2	82.1	92.3	7.7
Occupation not specified,	52.2	60.9	78.3	86.5	95.7	95.7	4.3
Total,	9.6	29.0	35.5	53.5	63.7	83.6	16.4

TABLE II. (a). — *Average Weekly Earnings: by Age Groups.*

Age.	NUMBER OF WORKERS EARNING —							Total.
	Under \$4.	\$4 and Under \$5.	\$5 and Under \$6.	\$6 and Under \$7.	\$7 and Under \$8.	\$8 and Under \$9.	\$9 and Over.	
14 and less than 16, .	36	17	8	9	2	—	—	72
16 and less than 18, .	19	22	16	18	8	4	2	89
18 and less than 21, .	5	20	40	47	29	22	7	170
21 and less than 25, .	2	14	22	20	45	23	23	149
25 and less than 30, .	—	4	10	15	14	17	17	77
30 and less than 35, .	2	1	1	6	4	4	10	28
35 and less than 40, .	2	5	5	2	5	3	5	27
40 and less than 45, .	4	1	3	5	5	4	4	26
45 and less than 50, .	1	1	1	4	2	—	2	11
50 and less than 55, .	—	2	3	2	1	—	1	9
55 and less than 60, .	—	—	1	1	—	2	—	4
60 and over, .	1	—	—	—	1	—	3	5
Total, . . .	72	87	110	129	116	79	74	667

NOTE. — Data concerning age were not available for 1,443 workers.

TABLE II. (b). — *Average Weekly Earnings: by Age Groups (Cumulative).*

Age.	NUMBER OF WORKERS EARNING—							\$9 and Over
	Under \$4.	Under \$5.	Under \$6.	Under \$7.	Under \$8.	Under \$9.		
14 and less than 16,	36	53	61	70	72	72	—	
16 and less than 18,	19	41	57	75	83	87	2	
18 and less than 21,	5	25	65	112	141	163	7	
21 and less than 25,	2	16	38	58	103	126	23	
25 and less than 30,	—	4	14	29	43	60	17	
30 and less than 35,	2	3	4	10	14	18	10	
35 and less than 40,	2	7	12	14	19	22	5	
40 and less than 45,	4	5	8	13	18	22	4	
45 and less than 50,	1	2	3	7	9	9	2	
50 and less than 55,	—	2	5	7	8	8	1	
55 and less than 60,	—	—	1	2	2	4	—	
60 and over,	1	1	1	1	2	2	3	
Total,	72	159	269	398	514	593	74	

NOTE. — Data concerning age were not available for 1,443 workers.

TABLE III. — *Average Weekly Earnings: by Establishments (Cumulative).*

ESTABLISHMENTS.	PER CENT. OF WORKERS EARNING —						
	Under \$4.	Under \$5.	Under \$6.	Under \$7.	Under \$8.	Under \$9.	\$9 and Over.
No. 1,	8.2	17.6	33.6	51.5	66.3	82.7	17.3
No. 2,	4.7	11.6	26.7	43.5	67.2	84.9	15.1
No. 3,	19.3	35.2	45.5	68.6	77.3	87.5	12.5
No. 4,	20.0	46.7	63.8	81.0	92.4	98.1	1.9
No. 5,	12.0	21.5	41.1	61.4	78.5	89.9	10.1
No. 6,	26.4	41.8	56.0	72.5	92.3	98.9	1.1
No. 7,	2.1	4.9	13.3	28.7	37.8	56.6	43.4
No. 8,	15.8	33.3	52.6	63.2	84.2	91.2	8.8
Total,	9.6	20.0	35.5	53.5	63.7	83.6	16.4

TABLE IV. — *Hours of Labor and Average Weekly Earnings.*

AVERAGE HOURS PER WEEK.	NUMBER OF WORKERS EARNING —							Total.
	Under \$4.	\$4 and Under \$5.	\$5 and Under \$6.	\$6 and Under \$7.	\$7 and Under \$8.	\$8 and Under \$9.	\$9 and Over.	
Less than 42, . . .	1	—	—	—	—	—	—	1
42 and less than 46, .	—	3	—	—	—	1	1	5
46 and less than 50, .	—	4	4	2	3	4	2	19
50 and less than 54, .	5	5	19	30	17	34	11	121
Total,	6	12	23	32	20	39	14	146

NOTE. — Data concerning hours were not available for 1,964 workers.

DIAGRAM I.

CURVE SHOWING PER CENT OF UNEMPLOYMENT
FOR 1,198 CORSET WORKERS
DURING 52 WEEKS.

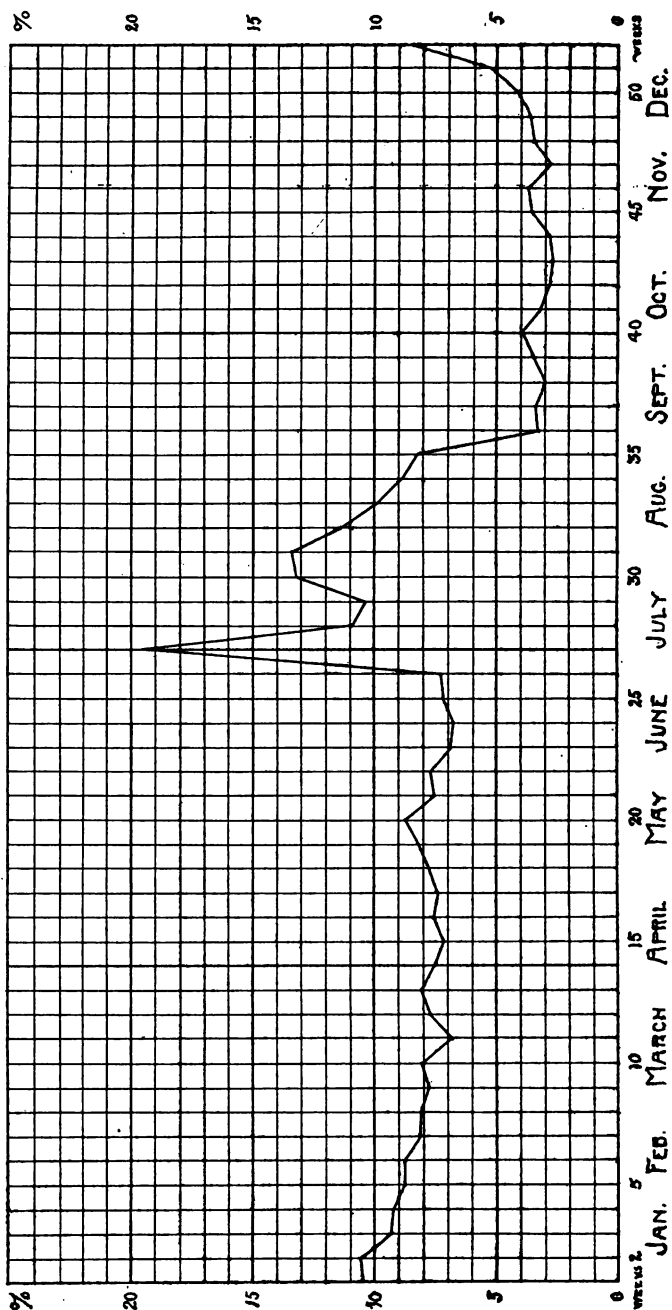


TABLE VI. — *Home Conditions and Weekly Earnings (Cumulative).*

HOME CONDITIONS.	NUMBER OF WORKERS EARNING —						
	Under \$4.	Under \$5.	Under \$6.	Under \$7.	Under \$8.	Under \$9.	\$9 and Over.
Living at home, . . .	67	141	233	341	440	512	53
Living away from home,	7	17	36	59	76	89	18
Total, . . .	74	158	269	400	516	601	71

NOTE. — Data concerning home conditions were not available for 1,438 workers.

FINANCIAL STATEMENT.

Appropriations: —	
For salary of secretary,	\$2,000 00
For compensation of members and expenses of commission,	5,000 00
	<hr/> \$7,000 00
Expenditures: —	
Salary of secretary,	\$833 33
Commissioners' services and expenses, \$886 88	
Salaries and expert services,	2,212 32
Traveling expenses and incidentals,	406 89
Rent,	320 00
Equipment purchased,	711 35
Equipment rented,	19 00
Printing,	191 70
Telephone and telegraph,	33 04
Stationery,	88 41
Postage,	44 94
	<hr/> 4,914 53
	<hr/> \$5,747 86
Unexpended balance reverting to State treasury: —	
Salary of secretary,	\$1,166 67
General appropriation,	85 47
	<hr/> 1,252 14
	<hr/> \$7,000 00

Respectfully yours,

AMY HEWES,
Secretary.

APPENDICES.

APPENDIX No. 1.

CHAPTER 706, ACTS OF 1912, AS AMENDED BY CHAPTERS 330 AND 673, ACTS OF 1913.

AN ACT TO ESTABLISH THE MINIMUM WAGE COMMISSION AND TO PROVIDE FOR THE DETERMINATION OF MINIMUM WAGES FOR WOMEN AND MINORS.

Be it enacted, etc., as follows:

SECTION 1. There is hereby established a commission to be known as the Minimum Wage Commission. It shall consist of three persons, one of whom may be a woman, to be appointed by the governor, with the advice and consent of the council. One of the commissioners shall be designated by the governor as chairman. The first appointments shall be made within ninety days after the passage of this act, one for a term ending October first, nineteen hundred and thirteen, one for a term ending October first, nineteen hundred and fourteen, and one for a term ending October first, nineteen hundred and fifteen; and beginning with the year nineteen hundred and thirteen, one member shall be appointed annually for the term of three years from the first day of October and until his successor is qualified. Any vacancy that may occur shall be filled in like manner for the unexpired part of the term.

SECTION 2. Each commissioner shall be paid ten dollars for each day's service, in addition to the traveling and other expenses incurred in the performance of his official duties. The commission may appoint a secretary, who shall be the executive officer of the board and to whose appointment the rules of the civil service commission shall not apply. It shall determine his salary, subject to the approval of the governor and council. The commission may incur other necessary expenses not exceeding the annual appropriation therefor, and shall be provided with an office in the state house or in some other suitable building in the city of Boston.

SECTION 3. It shall be the duty of the commission to inquire into the wages paid to the female employees in any occupation in the commonwealth, if the commission has reason to believe that the wages paid to a substantial number of such employees are inadequate to supply the necessary cost of living and to maintain the worker in health.

SECTION 4. If after such investigation the commission is of the opinion that in the occupation in question the wages paid to a substantial number of female employees are inadequate to supply the

necessary cost of living and to maintain the worker in health, the commission shall establish a wage board consisting of not less than six representatives of employers in the occupation in question and of an equal number of persons to represent the female employees in said occupation, and of one or more disinterested persons appointed by the commission to represent the public, but the representatives of the public shall not exceed one-half of the number of representatives of either of the other parties. The commission shall designate the chairman from among the representatives of the public, and shall make rules and regulations governing the selection of members and the modes of procedure of the boards, and shall exercise exclusive jurisdiction over all questions arising with reference to the validity of the procedure and of the determinations of the boards. The members of wage boards shall be compensated at the same rate as jurors; they shall be allowed the necessary traveling and clerical expenses incurred in the performance of their duties, these payments to be made from the appropriation for the expenses of the commission.

SECTION 5. The commission may transmit to each wage board all pertinent information in its possession relative to the wages paid in the occupation in question. Each wage board shall take into consideration the needs of the employees, the financial condition of the occupation and the probable effect thereon of any increase in the minimum wages paid, and shall endeavor to determine the minimum wage, whether by time rate or piece rate, suitable for a female employee of ordinary ability in the occupation in question, or for any or all of the branches thereof, and also suitable minimum wages for learners and apprentices and for minors below the age of eighteen years. When a majority of the members of a wage board shall agree upon minimum wage determinations, they shall report such determinations to the commission, together with the reasons therefor and the facts relating thereto.

SECTION 6. Upon receipt of a report from a wage board, the commission shall review the same, and may approve any or all of the determinations recommended, or may disapprove any or all of them, or may recommit the subject to the same or to a new wage board. If the commission approves any or all of the determinations of the wage board it shall, after not less than fourteen days' notice to employers paying a wage less than the minimum wage approved, give a public hearing to such employers, and if, after such public hearing, the commission finally approves the determination, it shall enter a decree of its findings and note thereon the names of employers, so far as they may be known to the commission, who fail or refuse to accept such minimum wage and to agree to abide by it. The commission shall thereafter publish in at least one newspaper in each county of the commonwealth a summary of its findings and of its recommendations. It shall also at such times and in such manner as it shall deem advisable publish the facts, as it may find them to

be, as to the acceptance of its recommendations by the employers engaged in the industry to which any of its recommendations relate, and may publish the names of employers whom it finds to be following or refusing to follow such recommendations. An employer who files a declaration under oath in the supreme judicial court or the superior court to the effect that compliance with the recommendation of the commission would render it impossible for him to conduct his business at a reasonable profit shall be entitled to a review of said recommendation by the court under the rules of equity procedure. The burden of proving the averments of said declaration shall be upon the complainant. If, after such review, the court shall find the averments of the declaration to be sustained, it may issue an order restraining the commission from publishing the name of the complainant as one who refuses to comply with the recommendations of the commission. But such review, or any order issued by the court thereupon, shall not be an adjudication affecting the commission as to any employer other than the complainant, and shall in no way affect the right of the commission to publish the names of those employers who do comply with its recommendations. The type in which the employers' names shall be printed shall not be smaller than that in which the news matter of the paper is printed. The publication shall be attested by the signature of at least a majority of the commission.

SECTION 7. In case a wage board shall make a recommendation of a wage determination in which a majority but less than two-thirds of the members concur, the commission, in its discretion, may report such recommendation and the pertinent facts relating thereto to the general court.

SECTION 8. Whenever a minimum wage rate has been established in any occupation, the commission may, upon petition of either employers or employees, reconvene the wage board or establish a new wage board, and any recommendation made by such board shall be dealt with in the same manner as the original recommendation of a wage board.

SECTION 9. For any occupation in which a minimum time rate only has been established, the commission may issue to any woman physically defective a special license authorizing the employment of the licensee for a wage less than the legal minimum wage: *provided*, that it is not less than the special minimum wage fixed for that person.

SECTION 10. The commission may at any time inquire into the wages paid to minors in any occupation in which the majority of employees are minors, and may, after giving public hearings, determine minimum wages suitable for such minors. When the commission has made such a determination, it may proceed in the same manner as if the determination had been recommended to the commission by a wage board.

SECTION 11. Every employer of women and minors shall keep a

register of the names, addresses and occupations of all women and minors employed by him and shall, on request of the commission or of the director of the bureau of statistics, permit the commission or any of its members or agents, or the director of the bureau of statistics or any duly accredited agent of said bureau, to inspect the said register and to examine such parts of the books and records of employers as relate to the wages paid to women and minors. The commission shall also have power to subpoena witnesses, administer oaths and take testimony. Such witnesses shall be summoned in the same manner and be paid from the treasury of the commonwealth the same fees as witnesses before the superior court.

SECTION 12. Upon request of the commission, the director of the bureau of statistics shall cause such statistics and other data to be gathered as the commission may require, and the cost thereof shall be paid out of the appropriation made for the expenses of the commission.

SECTION 13. Any employer who discharges or in any other manner discriminates against any employee because such employee has testified, or is about to testify, or because the employer believes that the employee may testify, in any investigation or proceeding relative to the enforcement of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than two hundred dollars, and not more than one thousand dollars for each offence.

SECTION 14. The commission shall from time to time determine whether employers in each occupation investigated are obeying its decrees, and shall publish in the manner provided in section six, the name of any employer whom it finds to be violating any such decree.

SECTION 15. Any newspaper refusing or neglecting to publish the findings, decrees or notices of the commission at its regular rates for the space taken shall, upon conviction thereof, be punished by a fine of not less than one hundred dollars for each offence.

SECTION 16. No member of the commission and no newspaper publisher, proprietor, editor or employee thereof, shall be liable to an action for damages for publishing the name of any employer in accordance with the provisions of this act, unless such publication contains some wilful misrepresentation.

SECTION 17. The commission shall, annually, on or before the first Wednesday in January, make a report to the general court of its investigations and proceedings during the preceding year.

SECTION 18. This act shall take effect on the first day of July in the year nineteen hundred and thirteen. *[Approved June 4, 1912.]*

APPENDIX No. 2.

RULES OF PROCEDURE FOR THE BRUSH MAKERS' WAGE BOARD.

Name. — This Board shall be known under the title of the Brush Makers' Wage Board.

1. *Organization.* — The chairman and secretary shall be appointed by the Minimum Wage Commission.

2. *Term of Office.* — The term of office of the Brush Makers' Wage Board shall be three years. Any representative of employers who becomes a worker at the trade shall vacate his seat. Any representative of workers who becomes an employer shall also vacate his seat. The question of fact shall in each case be determined by the commission. The commission may remove any member of the Board who shall unreasonably fail to attend the meetings of the Board, or who shall otherwise display unfitness for service thereupon. Vacancies shall be filled in such manner as the commission may designate.

3. *Voting.* — Each member shall have one vote. If, in the opinion of the chairman, the question upon which a vote is to be taken is one of permanent importance, in order that the vote may be, so far as possible, an expression of the opinion of the whole Board, the secretary shall obtain the vote of an absent member with his opinion in writing.

4. *Powers, Duties and Procedure.* — The Board shall examine the material submitted by the commission. It shall consider the question: What is the sum required a week to maintain in frugal but decent conditions of living, a self-supporting woman employed in a brush-making establishment?

It is the opinion of the commission that the absolute essentials of such decent conditions of living are (a) respectable lodging; (b) three meals a day; (c) suitable clothing; (d) some provision for recreation, self-improvement and care of health.

It shall consider the condition of the industry and effect thereon of any increase in the minimum wages paid. The Board shall then endeavor to determine, as directed by statute (chapter 706, Acts of 1912), the minimum wage suitable for a female employee of ordinary ability in the occupation in question, or for any or all of the branches thereof, and also suitable minimum wages for learners and apprentices, and for minors below the age of eighteen years.

5. *Meetings.* — The Board shall meet for organization upon a date fixed by the commission, and may adjourn its deliberations from time to time at its discretion. It shall be appropriate that the initial meetings be of such character as may afford opportunity for the establish-

